

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No: 10/721,481
Applicant: Robert P. Arentsen
Filed: November 25, 2003
Title: ISOLATION VALVE WITH ROTATABLE FLANGE
TC/A.U.: 3753
Examiner: Craig James Price
Confirmation No.: 5984
Docket No.: ITTD-BG101US

SUPPLEMENTAL REPLY BRIEF

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Commissioner for Patents
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S I R :

In response to the Office Action dated November 20, 2007,
Appellants' submit this Supplemental Reply Brief to more clearly map the claims to
the disclosure.

SUMMARY OF CLAIMED SUBJECT MATTER

See Fig. 3 of the drawings and pages 1 and 2 of the specification.
Isolation valves 300 are used to isolate a circular pump 302 from the remainder of
a fluid carrying system 304. To couple and uncouple the isolation valves 300 in the
system, mating flanges are formed on the valve and its mating part. The mating
flanges are formed with bolt holes that must be aligned to accept bolts that clamp
the mating flanges together. The alignment of the bolt holes may be difficult in
tight spaces with heavy, cumbersome components.

The claimed subject matter relates to a valve assembly (paragraph
0011, lines 1 and 2; paragraph 0024, line 1) as shown in Figs. 1A and 1B that
simplifies the coupling of the valve in a fluid carrying system by accommodating
slight misalignments between the bolt holes in the mating flanges (paragraph 0030,
lines 8-10).

Still referring to Figs. 1A and 1B, the valve assembly recited in claim 22 comprises a quarter turn ball valve 98 (paragraph 0025, line 1) and a valve housing 100 (referred to as a valve body in paragraph 0024, line 3 and as a housing in paragraph 0025, line 2, paragraph 0026, line 1; paragraph 0028, line 5, paragraph 0029, line 1) having inlet and outlet ports (not numbered, but see paragraph 0025, lines 2-4; paragraph 0027, lines 4-7; and paragraph 0028, line 1).

The valve assembly also comprises an insert 102 (paragraph 0024, lines 2-5) having a body member including an exterior surface (paragraph 0011, lines 3 and 4) and an internal flow channel 109 (paragraph 0028, line 2). One end of the insert 102 is coupled to the valve housing 100 (paragraph 0011, lines 4 and 5; paragraph 0028, line 1) so that the internal flow channel 109 communicates with one of the ports (paragraph 0028, lines 1-10).

A lip 104 is formed on the free end of the insert 102 body member (paragraph 001, line 5; paragraph 0029, lines 5-10) and this lip is spaced from the valve housing 100 when the insert 102 is assembled to the valve housing 100 (paragraph 0029, lines 5-10; and shown in Figs. 1A and 1B).

A rotatable flange 106 is carried on the exterior surface of the insert 102 (paragraph 0024, lines 2 and 3; paragraph 0029, lines 1-3) and this flange 106 is freely rotatable relative to the insert 102 and the valve housing 100 when the insert is assembled to the valve housing (paragraph 0024, lines 1-3; paragraph 0029, lines 1-3; and paragraph 0030, lines 8-10 which describes a rotatable flange that accommodates misalignment between the slots 26 on the rotatable flange and the holes in the mating flange).

The rotatable flange 106 further includes fastener holes 116 or 206 (paragraph 0030 and Figs. 2A-2D).

Claim 23 depends from claim 22 and adds that the valve body [housing] 100 and one end of the insert 102 are threaded (paragraph 0028, lines 3-7) and the internal flow channel 109 is formed with a polygonal cross-section adjacent the lip 104 to accommodate a tool for coupling the insert 102 to the valve body [housing] 100 (paragraph 0028, lines 3-5).

Claim 24 adds to claim 22 that the rotatable flange 102 is formed with a mounting hole 115 of a size and shape complementary to and larger than the exterior surface of the insert 102 (paragraph 0011, lines 6 and 7; paragraph 0029, lines 1-3).

Still referring to Figs. 1A and 1B, the valve assembly recited in claim 27 comprises a quarter turn ball valve 98 (paragraph 0025, line 1) mounted in a valve housing 100 (referred to as a valve body in paragraph 0024, line 3 and as a housing in paragraph 0025, line 2; paragraph 0026, line 1; paragraph 0028, line 5; paragraph 0029, line 1) having inlet and outlet ports (not numbered, but see paragraph 0025, lines 2-4; paragraph 0027, lines 4-7; and paragraph 0028, line 1).

The valve assembly also comprises an insert 102 (paragraph 0024, lines 2-5) having a body member including an exterior surface (paragraph 0011, lines 3 and 4) and an internal flow channel 109 (paragraph 0028, line 2). One end of the insert 102 is coupled to the valve housing 100 (paragraph 0011, lines 4 and 5; paragraph 0028, line 1) so that the exterior surface of the insert 102 extends axially from the valve housing 100 (paragraph 0028, lines 1-3 and clearly shown in Figs. 1A and 1B) and so that the internal flow channel 109 communicates with one of the ports (paragraph 0028, lines 1-10).

A lip 104 is formed on the free end of the insert 102 body member (paragraph 0011, line 5; paragraph 0039, lines 5-10) and this lip is spaced from the valve housing 100 by the exterior surface of the insert 102 (paragraph 0029, lines 5-10; and see Figs. 1A and 1B).

A flange 106 has a central opening 115 (paragraph 0029, lines 1-2) of a size and shape complementary to the exterior surface of the insert 102 (paragraph 0011, lines 3 and 6; paragraph 0029, lines 1-3) so that the flange 106 is spaced from the valve housing and is freely rotatable on the exterior surface of the insert (paragraph 0011, lines 6-8; paragraph 0029, lines 1-3; and paragraph 0030, lines 8-10 which describes a rotatable flange that accommodates misalignment between the slots 26 on the rotatable flange and the holes in the mating flange).

Claims 28 and 29 depend from claim 27 and each adds that the valve body [housing] 100 and one end of the insert 102 are threaded (paragraph 0028, lines 3-7). Claim 28 goes on to recite that one end of the flow channel 109 is formed to accommodate a tool for threadably coupling the insert 102 to the valve body [housing] 100 (paragraph 0028, lines 3-5) and claim 29 adds that the one end of the flow channel 109 has a polygonal cross-section to accommodate a tool for threadably fixing the insert 102 to the valve body [housing] 100 (paragraph 0028, lines 3-5).

CONCLUSION

Appellants' contend that there original Appeal Brief was in compliance with the rules. Regardless, Appellants have now paraphrased each claim and have pointed to the disclosure to explain the invention.

Respectfully submitted,



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Dated: December 19, 2007

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